Amendments to the Specification:

Please replace paragraph [0038] beginning at page 10, line 3, with the following rewritten paragraph:

--During operation of gas sensors 10a and 10b, gas from the environment diffuses ~~20~~ through the membrane 18 (via aperture 22 for sensor 10a) to sensing electrode 14. If this gas contains, for example, carbon monoxide, an electrochemical reaction occurs at sensing electrode 14, and an electrochemical reaction with oxygen occurs at counter electrode 16. Current is thus carried through the electrolyte 30 by ions produced in these reactions. The size of the current indicates the concentration of carbon monoxide.--

Please replace paragraph [0041] beginning at page 10, line 26, with the following rewritten paragraph:

--The membrane <u>18</u> is then positioned between upper 12a and lower housing portions 12b, and heat and pressure are applied using a press tool in order to compress the membrane <u>18</u> and the external contacts <u>28a, 28b</u> onto the housing <u>12a, 12b</u> portions, thereby bonding the assembly together. Alternatively, one or both of the housing portions 12a,b may be bonded to the membrane 18 using adhesive.--

Please replace paragraph [0042] beginning at page 11, line 5, with the following rewritten paragraph:

--Electrolyte <u>30</u> is then introduced into the electrolyte reservoir 20 via aperture 32. This aperture <u>32</u> is then plugged with an acid-tight plug (which may be gas permeable), and sealed in place using ultrasonic bonding. This ensures that electrolyte 30 does not leak from the sensor cell 10a.--

Please replace paragraph [0043] beginning at page 11, line 9, with the following rewritten paragraph:

--The assembly of sensor 10b is similar to that of sensor 10a. Electrodes 14 and 16 are formed on the lower surface of the membrane 18. If required, the permeability to gas of regions of the membrane 18 may be decreased, as described previously. The wick 21 is then sintered to the electrodes 14 and 16. Molten conductive polymer 26 is introduced into required areas of the membrane 18 from the upper surface of the membrane 18, by applying heat and pressure to force the material through the membrane 18 so that, on solidification, an amount solidified conductive polymer 26 protrudes through the membrane 18 to form external contacts 28a, 28b across porous membrane 18 without altering its mechanical integrity (i.e. tearing it) but provides an electrical pathway through membrane ~~28a and 28b~~18, to the contacts 28a, 28b. Further external contact means may be provided, held in place by the solidified conducting polymer 26.--

Please replace paragraph [0044] beginning at page 11, line 20, with the following rewritten paragraph:

--The membrane 18 is then positioned above lower housing portion 12b, and heat and pressure are applied using a press tool in order to compress the membrane 18 onto the housing portion 12b, thereby bonding the assembly together. Alternatively, the lower housing portion 12b may be bonded to the membrane 18 using adhesive. Electrolyte 30 is then introduced into the electrolyte reservoir 20 as previously described.--

Please replace paragraph [0045] beginning at page 12, line 1, with the following rewritten paragraph:

--Referring to Figures 1 and 2~~3~~, a conductive contact 28a, 28b~~or via 28~~ is formed by the process of impregnation of the porous membrane or substrate 18 by the conductive material in liquid form. In a preferred method, the substrate 18 is a polymeric material with open porosity, and the material to be impregnated is a polymer with lower melting point than the substrate material, loaded with conductive particles. The impregnating material 26 is forced into the pores of the substrate 18 in liquid form under pressure, so as

to form a conductive mass 26 within the pores extending from one side of the substrate 18 to the other. The mean size of the conductive particles may be smaller than that of the pores in the substrate 18, or may be comparable or larger, in which case the impregnation process and the substrate material are chosen to give sufficient deformation to the pores in the substrate 18, through heat, pressure or both, to allow the conducting particles to pass through them sufficiently to produce a conductive path.--

Please replace paragraph [0049] beginning at page 13, line 15, with the following rewritten paragraph:

--Figure 3 shows a gas sensor 100 comprises a housing 102 with a reservoir 104 for liquid electrolyte. The reservoir 104 has at its upper end a support member 108 mounted on or attached to the housing 102 to provide a rigid or semi-rigid support for the components connected thereto. The housing 102 has mounted in it contact pins 110, 114, 118 each in good electrical contact with associated moulded components of conducting polymer 112, 116, 120. Overlying the support member 108 is a first electrode assembly consisting of a ~~membrane~~porous substrate 122 with a catalyst layer 124. The catalyst material is preferably sintered together with the electrode to produce a robust electrode assembly. The catalyst layer (or electrode 124) is formed on the substrate 122 prior to introducing the substrate 122 into the housing 102, by for example screen-printing, suction deposition etc. The catalyst layer 124 might be a porous layer formed from a catalytic material such as Pt or Ru02, bound together and to the substrate 122 by means of a PTFE binder as is known in the art. Alternatively it might be a nonporous material, for example a metal film, possibly treated to increase its catalytic activity. The substrate 122 is porous and is of a material of higher melting point than the material of the housing 102 and the conducting polymer 120.--

Please replace paragraph [0050] beginning at page 14, line 4, with the following rewritten paragraph:

--The electrode assembly is sealed into the housing 102 with catalyst layer 124 uppermost as shown, by for example application of heat and pressure, or ultrasonic welding. The housing 102 material is locally melted and forced into the porous substrate 122 forming a strong bond in the bonding regions 126. Simultaneously, the conducting polymer 120, which initially projects above the level of the housing 102 surrounding it, melts and is forced through the substrate 122 and into contact with the ~~electrode~~catalyst 124. If the catalyst 124 is porous, then the conducting polymer 120 is preferably forced into the catalyst ~~is~~ layer 124, so improving the electrical contact and physical robustness of the assembly.--

Please replace paragraph [0051] beginning at page 14, line 14, with the following rewritten paragraph:

--A wick assembly 130 overlies the first ~~electrode~~catalyst 124. The wick assembly 130 is compressible and has extensions (shown as dotted outline 132) which reach down into the electrolyte reservoir 104. As second electrode assembly, consisting of one or more electrodes - two are shown in Figure 3, as 136 and 138 - on a second porous substrate 134, contacts the wick 130 on the opposite side. At least the second electrode 136 consists of a porous catalytic layer capable of reacting signal gas in the presence of air and electrolyte.--

Please replace paragraph [0052] beginning at page 14, line 22, with the following rewritten paragraph:

--The second electrode assembly is sealed to the housing 102 with the ~~catalyst layer~~second electrode 136 lowermost, by application of heat and pressure, ultrasonic welding or similar means as before. The housing material is forced into the substrate 134 forming a bond in the bonding regions 140 and the conducting polymer 112, 116 is melted and impregnated into the electrode 136, 138 and any other electrode that is provided on the common substrate ~~30~~134 according to details of the embodiment, making

electrical contact with them. This second process of sealing and making contact is essentially as described in the Applicant's granted US patent US 5,914,019. Finally a housing cap 144 is mounted onto the housing 102, by heat sealing, ultrasonic welding or the like. Cap 144 provides access of gas from the exterior to the electrode 136 via the porous substrate 134 and a gas distribution space 148, that access being limited by a diffusion barrier 146, shown in the form of a capillary. The reservoir 104 is partially filled with electrolyte (typically sulphuric acid) via a filling plug in the housing (not shown).--

Please replace paragraph [0055] beginning at page 15, line 18, with the following rewritten paragraph:

--While the contact arrangements 114, 116 and 118, 120 are shown as being at different distances from the edge of the cell, these might be located in any practical geometry as suits the sealing process and tooling, for example, they might be in line with one another relative to the edge. Also, while the ~~sealing surfaces~~bonding regions 126 and 140 are shown as being at different levels in the cell, and the seal processes have been described as being done in two stages, especially if very thin components are used these surfaces might be at the same level, with compliance and flexibility of the components optionally being exploited to allow the seals to be made simultaneously~~,~~.--